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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,105	02/15/2006	Masoud Ahmadi	99605	1246
23644 7590 10/10/2007 BARNES & THORNBURG LLP P.O. BOX 2786 CHICAGO, IL 60690-2786			EXAMINER JAMAL, ALEXANDER	
			ART UNIT 2614	PAPER NUMBER
			MAIL DATE 10/10/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/537,105

Applicant(s)

AHMADI, MASOUD

Examiner

Alexander Jamal

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Examiner notes that claims 14-17 are being read as independent claims with all the limitations of the referenced claims.

#### *Claim Rejections - 35 USC § 112*

2. **Claim 9** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per **claim 9**, it is not clear from which claim claim 9 depends. Examiner assumes claim 1.

#### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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2. **Claims 1-3,5-7,9-17**, rejected under 35 U.S.C. 102(e) as being anticipated by Wei (6775653).

As per **claim 1**, Wei discloses an echo detection system comprising processing means to correlate an incoming signal to an echo signal (Col 4 lines 60-68). A characteristic value (signal peak) is extracted and used to judge the echo delay.

As per **claim 2**, the signals are processed digitally, which is a quantized value of the signal power.

As per **claim 3**, the system judges whether the received signal contains an echo or not (echo delay), which is a binary judgment (it is there or not there).

As per **claims 5,11,12,13**, they are rejected as per **claim 1** rejection.

As per **claim 6**, Wei equations 1-5 show recursive operations for the correlation calculations (via the summations).

As per **claim 7**, Wei (Col 10 lines 50-68) disclose using a window for the detections.

As per **claim 9**, Wei (Col 8 lines 35-40) discloses the use of auto-correlation.

As per **claim 10**, the system uses the input and output signals (including the pitches contained in each of the signals).

As per **claims 14-17**, the hardware inherently requires software to control the digital hardware. The echo canceller is used in communications (Col 1 lines 1-30)

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 4,8**, rejected under 35 U.S.C. 103(a) as being unpatentable over Wei (6775653).  
as applied to claims 1-3 above, and further in view of Kurtz et al. (US20030016815A1).

As per **claim 4**, Wei discloses echo bulk delay estimation but does not disclose using decimation.

Kurtz discloses an echo bulk delay system that uses decimation for the advantage of efficiency (para. 52). It would have been obvious to one of ordinary skill in the art at the time of this application to use decimation for the purpose of increasing processing efficiency.

As per **claim 8**, Kurtz discloses looking for non-zero portions of the echo tail (detecting zero crossings) (para. 26).

5. **Claims 18**, rejected under 35 U.S.C. 103(a) as being unpatentable over Wei (6775653)., and further in view of Grizmala et al. (4947425).

As per **claim 18,27**, Wei discloses an echo delay estimator as per the claim 1 rejection, but does not disclose using a fine and coarse estimating stages.

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Grizmala discloses an echo delay system using coarse and fine estimation stages (Col 12 lines 45-65). It would have been obvious to one of ordinary skill in the art at the time of this application to use fine and coarse estimation stages for the purpose of greater accuracy and efficiency.

As per **claims 19,22,23**, the intervals are adjustable. They track the variable echo delays.

As per **claim 20**, it is rejected as per the claim 18 rejection.

As per **claim 21**, it is rejected as per the claim 2 rejection.

As per **claims 24-25**, they are rejected as per the claim 1 rejection.

As per **claim 26**, it is rejected as per the claim 14 rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

Examiner Alexander Jamal  
September 29, 2007

